WE CLAIM:

1. An isolated polynucleotide comprising the nucleotide sequence of SEQ ID NO: 3.

2. An isolated polynucleotide encoding a polypeptide with biological activity, said polynucleotide having greater than 98% sequence identity with the polynucleotide of SEQ ID NO: 3.

3. The polynucleotide encoding the polypeptide of SEQ ID NO: 5.

4. The polynucleotide of claim 1 which is a DNA sequence.

5. An isolated polynucleotide which comprises the complement of the polynucleotide of claim 1.

6. A vector comprising the polynucleotide of claim 1.

7. An expression vector comprising the polynucleotide of claim 1.

8. A host cell genetically engineered to comprise the polynucleotide of claim 1.

9. A host cell genetically engineered to comprise the polynucleotide of claim 1 operatively associated with a regulatory sequence that modulates expression of the polynucleotide in the host cell.

10. An isolated polypeptide encoded by the polynucleotide of claim 1.

11. A composition comprising the polypeptide of claim 10 and a carrier.

12. An antibody that specifically binds to SEQ ID NO: 5.

13. A method for detecting the polynucleotide of claim 1 in a sample, comprising:

a) contacting the sample with a compound that binds to and forms a complex with the polynucleotide of claim 1 for a period sufficient to form the complex; and

b) detecting the complex, so that if a complex is detected, the polynucleotide of claim 1 is detected.

14. A method for detecting the polynucleotide of claim 1 in a sample, comprising:

a) contacting the sample under stringent hybridization conditions with nucleic acid primers that anneal to the polynucleotide of claim 1 under such conditions;

b) amplifying a product comprising at least a portion of the polynucleotide of claim 1; and

c) detecting said product and thereby the polynucleotide of claim 1 in the sample.

15. The method of claim 14, wherein the polynucleotide is an RNA molecule and the method further comprises reverse transcribing an annealed RNA molecule into a cDNA polynucleotide.

16. A method for detecting the polypeptide of claim 10 in a sample, comprising:

a) contacting the sample with a compound that binds to and forms a complex with the polypeptide under conditions and for a period sufficient to form the complex; and

b) detecting formation of the complex, so that if a complex formation is detected, the polypeptide of claim 10 is detected.

17. A method for identifying a compound that binds to the polypeptide of claim 10, comprising:

a) contacting the compound with the polypeptide of claim 10 under conditions sufficient to form a polypeptide/compound complex; and

b) detecting the complex, so that if the polypeptide/compound complex is detected, a compound that binds to the polypeptide of claim 10 is identified.

18. A method for identifying a compound that binds to the polypeptide of claim 10, comprising:

a) contacting the compound with the polypeptide of claim 10, in a cell, under conditions sufficient to form a polypeptide/compound complex, wherein the complex drives expression of a reporter gene sequence in the cell; and

b) detecting the complex by detecting reporter gene sequence expression, so that if the polypeptide/compound complex is detected, a compound that binds to the polypeptide of claim 10 is identified.

19. A method of producing the polypeptide of claim 10, comprising,

a) culturing a host cell comprising the polynucleotide sequence of SEQ ID NO: 3, an active domain coding portion of SEQ ID NO: 3 complementary sequences thereof, under conditions sufficient to express the polypeptide in said cell; and

b) isolating the polypeptide from the cell culture or cells of step (a).

20. An isolated polypeptide comprising an amino acid sequence which is at least 98% identical to the amino acid sequence of SEQ ID NO: 5, or the active domain thereof.

21. The isolated polypeptide of SEQ ID NO: 5.

22. The polypeptide of claim 20 or 21 wherein the polypeptide is provided on a polypeptide array.

23. A collection of polynucleotides, wherein the collection comprising the sequence information of at least one of SEQ ID NO: 1, 2 or 3.

24. The collection of claim 23, wherein the collection is provided on a nucleic acid array.

25. The collection of claim 24, wherein the array detects full-matches to any one of the polynucleotides in the collection.

26. The collection of claim 24, wherein the array detects mismatches to any one of the polynucleotides in the collection.

27. The collection of claim 23, wherein the collection is provided in a computer-readable format.

28. A method of treatment comprising administering to a mammalian subject in need thereof a therapeutic amount of a composition comprising a polypeptide of claim 10 or 21 and a pharmaceutically acceptable carrier.

29. A method of treatment comprising administering to a mammalian subject in need thereof a therapeutic amount of a composition comprising an antibody that specifically binds to a polypeptide of claim 10 or 21 and a pharmaceutically acceptable carrier.

30. A pharmaceutical composition comprising an anti-JPL antibody, wherein said antibody specifically binds to a polypeptide having an amino acid sequence of SEQ ID. NO: 5.

31. The pharmaceutical composition of claim 30, wherein said antibody is a monoclonal anti-JPL antibody or antigen-binding fragment thereof that is specific for cells of a melanoma.

32. The pharmaceutical composition of claim 30, wherein said antibody is administered in an amount effective to kill or inhibit the growth of cells of a melanoma.

33. A method of targeting JPL protein on cells of a melanoma, comprising the step of administering a composition to said cells in an amount effective to target said JPL-expressing cells, wherein said composition is an anti-JPL antibody that specifically binds to a polypeptide having an amino acid sequence of SEQ ID NO: 5.

34. A method of targeting JPL protein on cells of a melanoma.

35. A method of killing or inhibiting the growth of JPL-expressing cells of a melanoma, comprising the step of administering a composition to said cells in an amount effective to kill or inhibit the growth of said cancer cells, wherein said composition is an anti-JPL antibody that specifically binds to a polypeptide having an amino acid sequence of SEQ ID. NO: 5.

36. A method of killing or inhibiting the growth of JPL-expressing cells that cause a cancer, comprising the step of administering a composition to said cells in an amount effective to kill or inhibit the growth of said cancer cells, wherein said composition comprises an anti-JPL antibody that specifically binds to a polypeptide having an amino acid sequence of SEQ ID NO: 5.

37. A method of killing or inhibiting the growth of JPL-expressing cells of a melanoma, comprising the step of administering a vaccine to said cells in an amount effective to kill or inhibit the growth of said cancer cells, wherein said vaccine comprises a JPL polypeptide having an amino acid sequence of SEQ ID NO: 5, or immunogenic fragment thereof.

38. A method of killing or inhibiting the growth of JPL-expressing cells of a melanoma, comprising the step of administering a composition to said cells in an amount effective to kill or inhibit the growth of said cancer cells, wherein said composition comprises a nucleic acid of SEQ ID NO: 3 encoding JPL polypeptides, or immunogenic fragment thereof, within a recombinant vector.

39. A method of killing or inhibiting the growth of JPL-expressing cells of a melanoma, comprising the step of administering a composition to said cells in an amount effective to kill or inhibit the growth of said cancer cells, wherein said composition comprises an antigen-presenting cell comprising a nucleic acid of SEQ ID NO: 3 encoding JPL polypeptides, or immunogenic fragment thereof, within a recombinant vector.

40. The method according to claims 33, 34, 35, 37, 38 or 39, wherein said cells are contacted with as second therapeutic agent.

41. The method according to claim 33, 34 or 35, wherein said anti-JPL antibody composition is administered in an amount effective to achieve a dosage range from about 0.1 to about 10 mg/kg body weight.

42. The method according to claims 33, 34, 35, 37, 38 or 39, wherein said pharmaceutical composition is administered in a sterile preparation together with a pharmaceutically acceptable carrier therefore.

43. A method of diagnosing a melanoma comprising the steps of:

detecting or measuring the expression of JPL protein on a cell; and

comparing said expression to a standard indicative of cancer.

44. The method according to claim 43, wherein said expression is JPL mRNA expression.

45. The method according to claim 43, wherein said expression is detected or measured using anti-JPL antibodies.

46. Use of an anti-JPL antibody for the preparation of a medicament for killing or inhibiting the growth of JPL-expressing cells of a melanoma, wherein said antibody specifically binds to a polypeptide having the amino acid sequence of SEQ ID NO: 5.

47. Use of a polypeptide having an amino acid sequence of SEQ ID NO: 5 for the preparation of a vaccine for killing or inhibiting the growth of JPL-expressing cells of a melanoma.

48. Use of a nucleic acid of SEQ ID NO: 3 encoding JPL polypeptide or immunogenic fragment thereof, within a recombinant vector, in preparation of a medicament for killing or inhibiting the growth of JPL-expressing cells of a melanoma.

49. Use of an antigen-presenting cell comprising a nucleic acid of SEQ ID NO: 3 encoding JPL polypeptide or immunogenic fragment thereof, within a recombinant vector, in preparation of a medicament for killing or inhibiting the growth of JPL-expressing cells of a melanoma.